Energy Efficiency Opportunities in Institutional Buildings

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AMERESCO

Issues Addressed Today

- Key Drivers in Institutional Market
- Technology Opportunities
- Case Studies
- Additional Service Opportunities
- Financing Options & Considerations
- Fit Between ESCOs and this Market

Introduction to Ameresco

- 16 Offices Coast-to-Coast
- Staff of 200+
- Revenues of $100 M+
- Three Years Old
- Independent: No utility, product ties

Core Business Services

- Energy Efficiency and Demand Side Services
  - Plant Rehabilitation, Maintenance and Operations
  - Energy Asset Development and Monetization
  - Utility Rebates (US phenomenon)
  - Energy Savings Performance Contracting
- Power Generation
  - Cogeneration
  - Power Quality and Reliability
  - Energy Asset Development and Monetization
  - Independent Power Production

Key Drivers in Institutional Market (1)

- Electricity Reliability Concerns
  - Therefore interest in Distributed Generation
- Concern about Volatility in Gas, Electric Prices
  - Need for Stable costs, given annual budgeting of agencies

Key Drivers in Institutional Market (2)

- Inadequate Capital Budgets and aging equipment needing modernization
- Government mandates to cut energy usage, costs
- Reductions in Government Budgets due to Economic Recession
  - Leads to search for operational savings

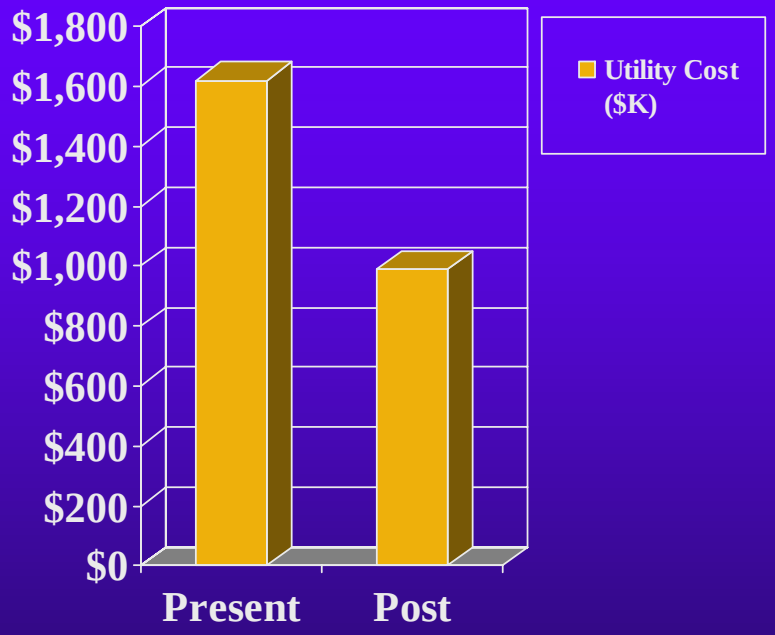
Technology Opportunities

- Lighting
- Controls
- VFDs
- HVAC
- DHW
- Water
- Envelope
- Appliances
- Alternative Technologies

Typical Energy Conservation Measures

1. New Lighting
2. Lighting Controls
3. Building Mgt Systems
4. New Steam Traps
5. New Kitchen Appliances
6. New Efficient Motors
7. Water Conservation
8. Convert Boiler to #2 Oil
9. New Windows
10. Insulate Steam Headers
11. Replace Boiler
12. Cogeneration
13. Alternative Technologies

An Actual Ameresco Project



- 36 Story High Rise
- Building Sq. Ft. 533,000
- Existing Cost: $3.03/sqft.
- Retrofit Cost: $1.85/sqft.
- Utility Cost Reduction of 39%
- Simple Pay Back of 6 years

Rutgers University – Sample College Campus Experience

Selected through a competitive RFP process, ESCO is implementing an energy savings performance contract that will produce over $280,000 in annual energy savings for the Hyde Park Central School District in New York.

- ✓ $4.9 million facility renewal program covering 9 schools
- ✓ Also includes over $2 million in operation and maintenance improvements
- ✓ Capital improvements include energy efficient windows and lighting, new DHW heaters, kitchen appliances, boiler plant replacement, a new energy management system, and steam trap replacements
- ✓ Unique energy education program will build staff and student's commitment to energy efficiency

Farleigh Dickenson University – Sample College Campus Experience

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MassBay College – Sample of Institutional E...

- ✓ Energy Saving Performance Contract; 10 years
- ✓ $3.2 Million ESPC
- ✓ Central plant conversion from steam to energy efficient hot water
- ✓ Centralized cooling
- ✓ New energy management system with over 165 points
- ✓ Project operational in Q2 2003.

MASSBAY COMMUNITY COLLEGE

Additional Shared Savings & Long Term Services Opportunities

- Add maintenance savings to calculations
- Long term relationships allow for mid-term upgrades for new technologies: e.g. demand controls integrated with metering, bill paying
- Provide annual services:
  - Annual equipment trouble-shooting
  - Savings monitoring
  - Maintenance staff training
  - Direct maintenance contracts
  - Utility bill metering, bill paying

ESCO/Institutional Services Opportunities: 2

- Energy Savings Guarantees
- Fuels Procurement
- Equipment Selection, Purchasing
- Turnkey Installations
- Utility Incentives Administration & Procurement
- Building Maintenance
- Project Financing

Financing Considerations

- Asset Monetization
  - Leverage Asset off Balance Sheet
  - Reduce Operation Costs
  - Short- to Long-Term $ Advantage
  - Increased Asset Valuation

Financing Options for Sharing Savings

- Principle: Offer cash flow advantage to Client
- Front End Lump Sum Payment to Client
- Fixed % share net of financing
- Structure Savings to Achieve ROI: flexible term
- Balloon Payments to Client in later years
- Adopt appropriate discount rate
- Factor in rate escalations: consumption times present rates

Additional Financial Leveraging Sources in US

- State Economic Development Incentives
  - Grants for Distressed Areas
  - Tax Credits
  - Low interest Loan Financing
  - Other

Additional Financial Leveraging Sources

- Client Capital Budget
  - Cost share for long payback items, such as windows, chiller replacements, piping infrastructure repair
  - Integration of energy performance contract and debt financing for capital improvements can lower effective borrowing rate or improve security, other terms

Additional Financial Leveraging Sources

- Cogeneration: reduces thermal costs, which in turn
  - Increases cost savings
  - Enlarges package of capital measures which can be financed from savings

SYNERGIES FROM LEVERAGING

- 1+1=3: Sum of Sources in One Efficiency Project exceeds sum of parts
- Chicago Housing Authority: $17M Paid from Financing plus $13M Customer Contribution=$50 M project
- Additional Synergies from Integration of Efficiency and Power: Efficiency reduces Capacity Requirements, which further reduces costs, adds value to provider

The Chauffage Opportunity: Selling Chilled Water, Hot Water

- Integration of Efficiency and Distributed Generation offers Owner to Sell End Use commodities:
  - Chilled water
  - Hot water
  - Lighting
  - Space heat

CONCLUSION

- Institutional Sector Best US Fit for Energy Services Companies
- Technology and Financing Services Strongest Offerings
- Flexibility in Responding to Individual Client Needs Important
- Long Term Nature of the Relationship Provides Potential Solutions to Emerging Needs